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Review

Role of fibroblast growth factors in organ regeneration and repair

Elie El Agha[a], Djuro Kosanovic[a], Ralph T. Schermuly[a], Saverio Bellusci[a,b,*]

[a] Universities of Giessen and Marburg Lung Center (UGMLC), Member of the German Center for Lung Research (DZL), Excellence Cluster Cardio-Pulmonary System (ECCPS), Justus-Liebig-University, Giessen, Hessen, Germany
[b] Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

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ABSTRACT

In its broad sense, regeneration refers to the renewal of lost cells, tissues or organs as part of the norm life cycle (skin, hair, endometrium *etc.*) or as part of an adaptive mechanism that organisms have dev oped throughout evolution. For example, worms, starfish and amphibians have developed remarka regenerative capabilities allowing them to voluntarily shed body parts, in a process called autoto only to replace the lost parts afterwards. The bizarre myth of the fireproof homicidal salamander t can survive fire and poison apple trees has persisted until the 20th century. Salamanders possess of the most robust regenerative machineries in vertebrates and attempting to draw lessons from li regeneration in these animals and extrapolate the knowledge to mammals is a never-ending endeav

Fibroblast growth factors are potent morphogens and mitogens that are highly conserved among animal kingdom. These growth factors play key roles in organogenesis during embryonic developm as well as homeostatic balance during postnatal life. In this review, we provide a summary about current knowledge regarding the involvement of fibroblast growth factor signaling in organ regenerat and repair. We also shed light on the use of these growth factors in previous and current clinical trials a wide array of human diseases.

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1. Introduction

1.1. Historical background

Fibroblast growth factors (FGFs) constitute a family of ev lutionary conserved polypeptides that are involved in dive morphogenic and organogenic programs during embryonic dev opment as well as homeostatic balance during postnatal li

* Corresponding author at: Universities of Giessen and Marburg Lung Center (UGMLC), Member of the German Center for Lung Research (DZL), Excellence Cluster Cardio-Pulmonary System (ECCPS), Justus-Liebig-University, Giessen, Hessen, Germany.
E-mail address: Saverio.Bellusci@innere.med.uni-giessen.de (S. Bellusci).

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